

CLAIMS

1. Nozzle body for a liquid droplet spray device for nebulising a high-viscous liquid substance having a viscosity of at least 4 mPas such as functional liquids, medicated or not, sanitizing or not, fragranced or not, comprising:

- a first substrate in which a space is formed,
- a second substrate having at least one nozzle membrane section and reinforcement sections,

wherein said first and second substrates are arranged such to enclose the space, .

wherein each said nozzle membrane section comprises a high-density array of outlet nozzles and output channels that connect said enclosed space with each of said outlet nozzles, said outlet nozzles and said output channels having a tightly-toleranced, straight, non-tapered shape,

wherein said second substrate has a top surface in which at least one cavity is formed so as to provide said nozzle membrane section corresponding to the bottom of said cavity with surrounding reinforcement sections, and a bottom surface adjacent to and enclosing said space thus forming a chamber for containing said liquid substance,

wherein each said nozzle output channel is step-shaped with a wider portion being adjacent said space and a thinner portion containing a protrusion section protruding beyond the top surface of said nozzle membrane section of said second substrate such that the exterior side wall of the protrusion section of said output channel is at a substantially straight angle with respect to the top surface of said nozzle membrane section of said second substrate.

2. Nozzle body according to claim 1, wherein said high-density array corresponds to an array having at least 85 outlet nozzles for a nozzle membrane section of $500 \mu\text{m}^2$.

3. Nozzle body according to claim 2, wherein said high-density array corresponds to an array having at least 169 outlet nozzles for a nozzle membrane section of $500 \mu\text{m}^2$.

4. Nozzle body according to claim 2, wherein said high-density array corresponds to an array having at least 300 outlet nozzles for a nozzle membrane section of $500 \mu\text{m}^2$.

5. Nozzle body according to anyone of the preceding claims, wherein the viscosity of said liquid substance is at least 5 mPas.

6. Nozzle body according to anyone of the preceding claims, wherein said first and second substrates are formed integrally from one substrate.

7. Nozzle body according to anyone of the preceding claims, wherein said space consists of a soft porous medium for containing the liquid substance.

8. Nozzle body according to anyone of the preceding claims, wherein said space consists of at least two sub-spaces separated by a flexible but leak-tight separation, each sub-space containing a different liquid to be ejected together through said nozzle membrane section.

9. Liquid droplet spray device for nebulising a high viscous liquid substance, comprising:

- a nozzle body according to anyone of the preceding claims, and
- a vibrating element disposed to vibrate liquid in said space so as to eject said liquid substance as a spray through said outlet nozzles.

10. Liquid droplet spray device according to claim 9, wherein said vibrating element is attached to said nozzle body through removable attachment means.